

Chapter 7

ONSET OF SUBSTANCE USE

Planning effective interventions necessitates an awareness of alcohol, tobacco, and drug initiation onset. Intervention that occurs after substance initiation will be less effective than intervention that occurs prior to onset. Adolescent attention to alcohol and drug education material is also likely to be quite low if the message occurs far before the decision-making period. This chapter addresses the age of initiation for various types of substances. Knowing the age of alcohol and drug use onset will provide valuable information as to the appropriate timing of interventions in the school, the home, or society at large. Additionally, since onset is likely to vary by substance type, the information provided should give an indication regarding when the intervention should focus on illicit drugs versus alcohol or tobacco use.

Respondents at each grade level were asked to provide retrospective reports regarding what age, if ever, they first used various substances. Response choices were (1) *never*, (2) *9 or younger*, (3) *age 10*, (4) *age 11*, (5) *age 12*, (6) *age 13*, (7) *age 14*, (8) *age 15*, (9) *age 16*, and (10) *17 or older*. Student responses provide an indication of what age students first used different substances and the proportion of students who have used different substances by each age. Comparisons between 6th, 8th, 10th, and 12th graders can indicate possible trends in substance use initiation. Tables 36a through 36d give the retrospective initiation as reported by students in grades 6, 8, 10, and 12. Table 37 puts together this information for illicit drugs and indicates the percentage of students who have used various drugs by a certain age. Table 38 puts together this information for alcohol and tobacco, and indicates the percentage of students who have used alcohol and tobacco by a certain age. Figure 45 further highlights substance use at various ages and compares onset reports by students in grades 6, 8, 10, and 12. Finally, Table 39 shows the relationship between early onset of using tobacco, alcohol, and marijuana with using various illicit drugs.

Retrospective reports by students in grades 6, 8, 10, and 12 are likely to vary by grade level for a variety of reasons. First, lower grades have fewer dropouts and fewer absentees. Second, memory errors occur over time. Thus, the 10th- and 12th-grade samples probably exclude some students who started using substances at an early age and may include students who have used substances at earlier ages than they accurately recall. This would make onset for the 6th- and 8th-grade samples appear earlier than for the 10th- and 12th-grade samples. One must take these factors into account when deciding which grade level provides the most valid retrospective report. Answers by 6th graders are probably less tainted by memory lapses and may represent more at-risk students (e.g., students who may later drop out from school). However, alcohol and drug use may not occur until the 8th grade at the earliest, making 10th and 12th graders the most useful data source for later onset. The responses from 8th graders tend to provide the best of both worlds because the 8th-grade students should have fewer memory lapses than students from other grades, and the 8th-grade sample may contain more at-risk students (fewer dropouts) whose onset of alcohol, tobacco, and drug use occurred after the 6th grade.

Onset of illicit drugs, alcohol, and tobacco is discussed in this chapter. Differences in retrospective reports by grade level are also indicated. Comparisons to nationwide reports are not made because the *2003 Monitoring the Future* data asks what grade students initiated drug use, rather than age of initiation. The chapter concludes by addressing the relationship between early onset of alcohol, tobacco, and marijuana, and the use of other illicit drugs.

TABLE 36A
Incidence of Use for Various Types of Substances, by Grade:
Sixth Grade, 2003

(Entries are percentages %)

Sixth Graders									
Age in which drug was first used	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
9 years or younger	0.5	1.9	0.2	0.1	0.1	0.4	0.2	0.6	0.2
10 years old	0.8	1.3	0.1	0.1	0.1	0.1	0.1	0.5	0.0
11 years old	0.2	0.9	0.1	0.0	0.0	0.1	0.0	0.6	0.0
12 years or older	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Never Used	98.5	95.8	99.5	99.8	99.8	99.4	99.7	98.4	99.8

Sixth Graders								
Age in which drug was first used	GHB	Rohypnol	Ketamine	Alcohol	Been Drunk	Drank Alcohol Regularly	Smoked First Cigarette	Smokeless Tobacco
9 years or younger	0.1	0.1	0.3	7.3	0.7	0.5	4.2	0.5
10 years old	0.1	0.0	0.1	4.0	0.9	0.6	1.6	0.2
11 years old	0.0	0.0	0.0	1.9	0.4	0.4	0.9	0.2
12 years or older	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Never Used	99.8	99.9	99.6	86.8	98.0	98.4	93.3	99.1

NOTES: Total column percentages will not always add to 100% because of rounding.

TABLE 36B
Incidence of Use for Various Types of Substances, by Grade:
Eighth Grade, 2003

(Entries are percentages %)

Eighth Graders									
Age in which drug was first used	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
9 years or younger	1.6	2.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2
10 years old	1.3	1.3	0.2	0.1	0.1	0.2	0.1	0.3	0.1
11 years old	2.5	1.6	0.2	0.1	0.1	0.2	0.2	0.3	0.2
12 years old	3.9	2.4	0.2	0.2	0.1	0.2	0.3	0.5	0.3
13 years old	2.5	1.3	0.2	0.1	0.1	0.2	0.2	0.4	0.3
14 years or older	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
Never Used	87.9	91.1	98.8	99.1	99.3	98.8	98.9	98.2	98.9

Eighth Graders								
Age in which drug was first used	GHB	Rohypnol	Ketamine	Alcohol	Been Drunk	Drank Alcohol Regularly	Smoked First Cigarette	Smokeless Tobacco
9 years or younger	0.1	0.0	0.3	12.5	2.2	1.5	8.1	0.8
10 years old	0.1	0.1	0.2	4.9	1.4	0.7	3.5	0.5
11 years old	0.1	0.1	0.1	5.0	1.9	1.4	3.8	0.7
12 years old	0.1	0.1	0.1	8.7	4.1	3.0	4.4	0.6
13 years old	0.1	0.1	0.2	5.3	3.4	3.1	2.5	0.3
14 years or older	0.1	0.0	0.0	0.4	0.5	0.6	0.3	0.1
Never Used	99.4	99.5	99.2	63.2	86.6	89.7	77.5	97.1

NOTES: Total column percentages will not always add to 100% because of rounding.

TABLE 36C
Incidence of Use for Various Types of Substances, by Grade:
Tenth Grade, 2003

(Entries are percentages %)

Tenth Graders									
Age in which drug was first used	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
9 years or younger	1.7	1.5	0.5	0.3	0.3	0.3	0.2	0.3	0.2
10 years old	1.0	0.5	0.1	0.1	0.1	0.1	0.2	0.1	0.1
11 years old	1.7	0.8	0.1	0.1	0.0	0.1	0.1	0.1	0.1
12 years old	3.9	1.3	0.3	0.2	0.1	0.2	0.5	0.2	0.3
13 years old	6.8	1.8	0.4	0.5	0.1	0.5	0.7	0.4	0.9
14 years old	9.8	1.3	0.8	1.0	0.2	1.1	0.9	0.4	0.9
15 years old	4.8	0.6	0.7	0.5	0.3	0.8	0.7	0.6	0.8
16 years or older	0.7	0.0	0.2	0.1	0.0	0.0	0.1	0.2	0.2
Never Used	69.6	92.1	97.0	97.3	98.9	96.9	96.7	97.8	96.5

Tenth Graders								
Age in which drug was first used	GHB	Rohypnol	Ketamine	Alcohol	Been Drunk	Drank Alcohol Regularly	Smoked First Cigarette	Smokeless Tobacco
9 years or younger	0.3	0.2	0.2	12.1	1.6	1.1	8.9	0.8
10 years old	0.1	0.0	0.1	3.1	0.9	0.4	3.7	0.4
11 years old	0.1	0.0	0.0	3.9	1.4	0.7	2.6	0.3
12 years old	0.2	0.1	0.1	7.0	3.2	1.9	5.7	0.4
13 years old	0.1	0.1	0.1	11.4	7.4	3.8	7.6	0.5
14 years old	0.2	0.3	0.0	14.0	10.4	8.0	4.7	1.2
15 years old	0.2	0.2	0.1	6.9	7.8	7.7	2.5	0.7
16 years or older	0.0	0.0	0.0	0.7	0.7	1.3	0.3	0.1
Never Used	98.9	99.2	99.4	40.9	66.6	75.3	64.1	95.6

NOTES: Total column percentages will not always add to 100% because of rounding.

TABLE 36D
Incidence of Use for Various Types of Substances, by Grade:
Twelfth Grade, 2003

(Entries are percentages %)

Twelfth Graders									
Age in which drug was first used	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
9 years or younger	1.7	1.6	0.1	0.1	0.1	0.2	0.1	0.2	0.1
10 years old	1.0	0.4	0.1	0.2	0.1	0.1	0.3	0.0	0.0
11 years old	1.5	0.4	0.1	0.1	0.1	0.1	0.1	0.0	0.1
12 years old	4.1	1.3	0.3	0.3	0.3	0.2	0.5	0.1	0.3
13 years old	7.0	0.9	0.4	0.4	0.3	0.8	0.5	0.1	0.6
14 years old	8.3	1.1	0.5	0.6	0.1	0.6	0.9	0.0	1.5
15 years old	10.2	1.3	0.7	0.8	0.3	1.0	1.3	0.3	1.7
16 years old	7.3	1.7	1.3	1.2	0.3	1.8	2.2	1.1	1.8
17 years or older	3.5	0.3	1.1	0.4	0.1	0.7	0.8	0.5	0.4
Never Used	55.6	91.2	95.5	95.8	98.3	94.6	93.5	97.6	93.6

Twelfth Graders								
Age in which drug was first used	GHB	Rohypnol	Ketamine	Alcohol	Been Drunk	Drank Alcohol Regularly	Smoked First Cigarette	Smokeless Tobacco
9 years or younger	0.0	0.0	0.1	9.1	1.4	0.6	8.6	1.3
10 years old	0.0	0.1	0.1	3.1	0.7	0.3	3.5	0.5
11 years old	0.0	0.1	0.1	2.5	1.3	0.4	2.9	0.3
12 years old	0.0	0.0	0.0	6.5	3.2	1.1	5.9	0.8
13 years old	0.2	0.1	0.1	9.4	5.2	1.9	6.3	0.8
14 years old	0.4	0.2	0.2	10.5	8.2	4.8	5.6	1.1
15 years old	0.2	0.2	0.2	14.4	11.5	9.0	5.4	1.2
16 years old	0.2	0.2	0.5	12.0	14.5	13.0	4.9	1.1
17 years or older	0.1	0.1	0.1	5.0	5.7	9.6	2.3	0.6
Never Used	98.8	99.2	98.7	27.5	48.4	59.4	54.7	92.5

NOTES: Total column percentages will not always add to 100% because of rounding.

TABLE 37
Incidence of Use for Various Illicit Drugs:
A Comparison of Responses From Sixth, Eighth, Tenth, and Twelfth Graders, 2003
 (Entries are percentages %)

Percent who used by the time they were 9 years old									
Grade level of respondents	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
6th Grade	0.5	1.9	0.2	0.1	0.1	0.4	0.2	0.6	0.2
8th Grade	1.6	2.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2
10th Grade	1.7	1.5	0.5	0.3	0.3	0.3	0.2	0.3	0.2
12th Grade	1.7	1.6	0.1	0.1	0.1	0.2	0.1	0.2	0.1

Percent who used by the time they were 10 years old									
6th Grade	1.2	3.1	0.4	0.2	0.2	0.5	0.3	1.0	0.2
8th Grade	2.9	3.6	0.5	0.4	0.3	0.5	0.3	0.5	0.3
10th Grade	2.8	2.1	0.6	0.4	0.3	0.4	0.4	0.4	0.3
12th Grade	2.7	2.0	0.2	0.3	0.3	0.3	0.3	0.2	0.1

Percent who used by the time they were 11 years old									
6th Grade	1.4	4.1	0.5	0.2	0.2	0.6	0.3	1.6	0.2
8th Grade	5.4	5.2	0.6	0.5	0.4	0.7	0.5	0.8	0.5
10th Grade	4.5	2.9	0.6	0.5	0.4	0.5	0.5	0.5	0.4
12th Grade	4.2	2.3	0.3	0.4	0.4	0.4	0.4	0.3	0.2

Percent who used by the time they were 12 years old									
6th Grade	1.5	4.2	0.5	0.2	0.2	0.6	0.3	1.6	0.2
8th Grade	9.3	7.6	0.9	0.7	0.5	0.9	0.8	1.3	0.8
10th Grade	8.4	4.1	1.0	0.7	0.4	0.7	1.0	0.6	0.7
12th Grade	8.2	3.6	0.6	0.8	0.7	0.6	0.9	0.3	0.5

(Table continued on next page)

TABLE 37 (continued)
Incidence of Use for Various Illicit Drugs:
A Comparison of Responses From Sixth, Eighth, Tenth, and Twelfth Graders, 2003
 (Entries are percentages %)

Percent who used by the time they were 13 years old									
Grade level of respondents	Marijuana	Inhalants	Cocaine	Methamphetamine	Heroin or Other Opiates	Sedatives or Tranquilizers	Hallucinogens	Steroids	Ecstasy
8th Grade	11.8	8.9	1.1	0.8	0.6	1.1	1.0	1.6	1.1
10th Grade	15.2	5.9	1.4	1.2	0.6	1.2	1.7	1.0	1.6
12th Grade	15.2	4.5	1.0	1.2	0.9	1.3	1.4	0.4	1.0

Percent who used by the time they were 14 years old									
8th Grade	12.1	9.0	1.2	0.9	0.7	1.2	1.1	1.8	1.1
10th Grade	25.0	7.2	2.2	2.1	0.8	2.3	2.6	1.4	2.5
12th Grade	23.5	5.6	1.5	1.8	1.0	1.9	2.3	0.4	2.5

Percent who used by the time they were 15 years old									
10th Grade	29.8	7.9	2.9	2.6	1.0	3.1	3.2	2.0	3.3
12th Grade	33.7	6.9	2.2	2.6	1.3	2.9	3.6	0.8	4.3

Percent who used by the time they were 16 years old									
10th Grade	30.5	7.9	3.0	2.7	1.1	3.1	3.3	2.2	3.5
12th Grade	40.9	8.5	3.4	3.8	1.6	4.7	5.8	1.9	6.1

Percent who used by the time they were 17 or 18 years old									
12th Grade	44.4	8.8	4.5	4.2	1.7	5.4	6.5	2.4	6.4

INCIDENCE OF ILLICIT DRUG USE BY AGE

The findings reported below suggest that the onset of riskier, more deviant drugs are usually after the onset of less deviant drugs, such as marijuana and inhalants. As a whole, for most illicit drugs, onset seems to be occurring as early as 9 years of age, but most typically between the ages of 13 and 16. The use of marijuana, however, is begun by 9 or 10 years of age, with a substantial portion of students reporting use of marijuana by the time they are 12 years old (on average, 8% of the students in grades 8, 10, and 12) and an even larger portion of students reporting use by the time they are 13 years old (on average, 15% of the students in grades 10 and 12). Approximately one third of the students have used marijuana by the time they are 15 years old. Retrospective reports of illicit drugs, other than marijuana, indicate usage does not typically begin before age 13. However, by age 15, approximately 3% of the 10th and 12th graders report having tried one or more of the following illicit drugs: cocaine, methamphetamine, sedatives or tranquilizers, hallucinogens, and ecstasy.

The Use of Marijuana and Inhalants

Overview of Key Findings. Most students initiate the use of marijuana somewhere between the ages of 13 and 16. More than one tenth of the 8th, 10th, and 12th graders reported onset of marijuana use by the age of 13. Approximately one fourth of the 10th and 12th graders reported onset of marijuana use occurring by the age of 14, and nearly one third of the 10th and 12th graders reported onset of marijuana use occurring by the age of 15. Initiation of inhalant use to get high begins by the time students are 9 years or younger. No one age group can be clearly singled out as the primary point of inhalant initiation. Prevention efforts for both marijuana and inhalants should occur prior to grade 6 and should be strongly reiterated in grade 8. Unless otherwise indicated, the findings detailed below summarize the data found in Table 37.

- Onset of use is earlier for *marijuana* and *inhalants* than all other illicit drugs. *Marijuana* use has been initiated by the age of 12 for 2% of the 6th-grade respondents, 9% of the 8th-grade respondents, and 8% of the 10th- and 12th-grade respondents. *Inhalant* use has been initiated by the age of 12 for 8% of the 8th-grade respondents and 4% of the 6th-, 10th-, and 12th-grade respondents. Less than 2% of the students, in all grades, reported having tried any of the other illicit drugs by the age of 12.
- As highlighted in Figure 45d, most students initiate the use of marijuana somewhere between the ages of 13 and 16. Use of *marijuana* occurs as early as 9 years of age or younger for some students, with 2% of 8th, 10th, and 12th graders reporting marijuana use by the age of 9 (see Table 37). Thus, 1 out of 50 students starts using marijuana prior to turning 10 years old.
- Although less than one tenth of the 8th, 10th, and 12th graders reported having used *marijuana* by the time they are 12 years old, the percentage nearly doubles by age 13, with 12% of 8th graders, 15% of 10th graders, and 15% of 12th graders reporting that they have used marijuana by that age.

FIGURE 45
Retrospective Reports of First Alcohol, Cigarette, and Marijuana Use by Grade Level:
Percentage of Students Who Reported First Using by Each Age, 2003

Figure 45a:
 Retrospective Reports of **Alcohol Use**

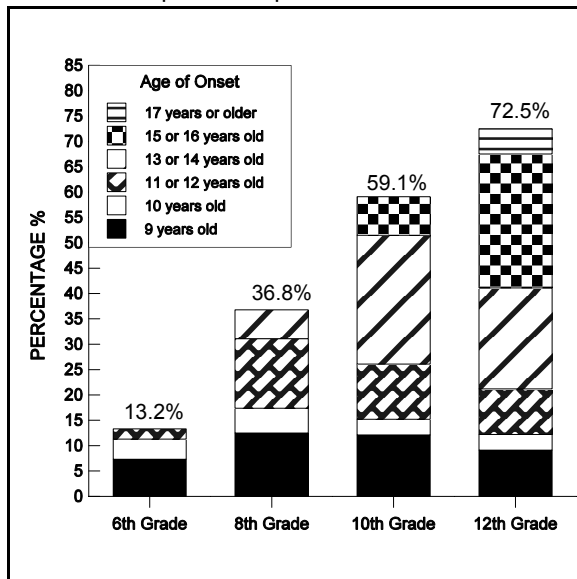


Figure 45b:
 Retrospective Reports of **Having Been Drunk**

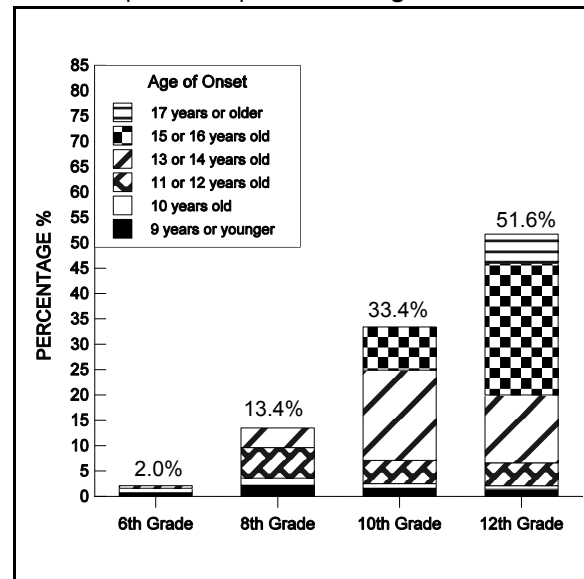


Figure 45c:
 Retrospective Reports of **Cigarette Use**

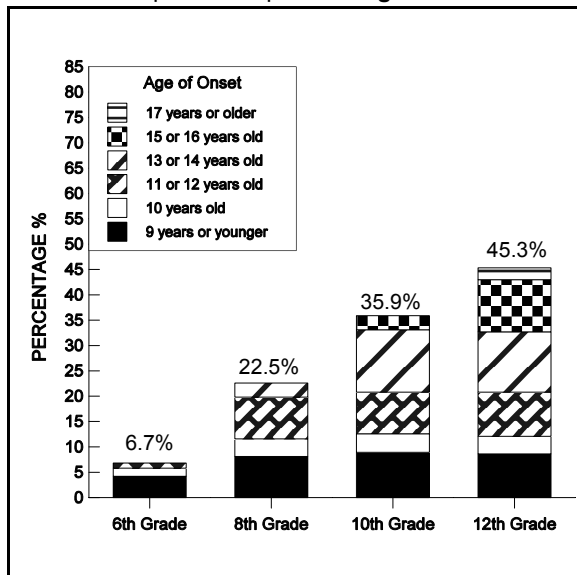
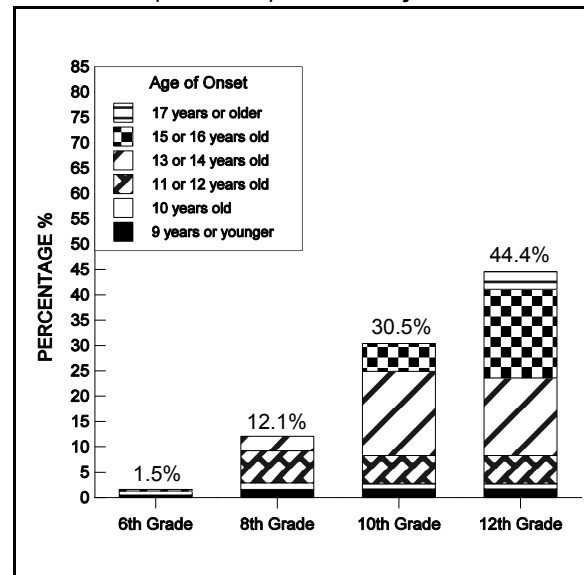


Figure 45d:
 Retrospective Reports of **Marijuana Use**



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- Approximately one fourth of the 10th (25%) and 12th graders (24%) reported that they used **marijuana** by 14 years of age. Approximately one third of the 10th (30%) and 12th graders (34%) reported that they used marijuana by 15 years of age. Thus, by age 14, approximately 1 out of 4 students has tried marijuana, and by age 15, approximately 1 out of 3 students has tried marijuana.
- Table 37 suggests that **marijuana** prevention efforts should occur *prior* to the age of 9 because nearly 2% of the students have used marijuana by 9 years of age, and the percentages using increase substantially in subsequent years. For instance, in grades 8, 10, and 12, the percentages of students reporting that they have used marijuana by age 12 are approximately five times higher than the percentages of students reporting they have used marijuana by age 9. Efforts to educate students about marijuana should be reiterated each year thereafter, with the strongest efforts occurring in the 8th grade (around age 12 or 13). As seen in Figure 45d, a large percentage of students begin trying marijuana when they are 11 or 12 years old, and another large proportion begin trying marijuana when they are 13 or 14 years old. Table 36b shows that the majority of 8th graders who have used marijuana began when they were 12 years old (4% starting during this time). Table 36c shows that the majority of 10th graders who have used marijuana began use when they were 14 years old (10% starting during this time). Table 36d shows that the majority of 12th graders who have used marijuana began when they were 15 years old (10%). In sum, education efforts directed at preventing marijuana use need to occur prior to the 6th grade and should be strongly reiterated in the 8th grade.
- Use of **inhalants** to get high is reportedly initiated by 2% of the 6th, 8th, 10th, and 12th graders by the time they were 9 years or younger. The percentages of students who reported trying inhalants typically rise at least 1 percentage point at each subsequent age (see Table 37).
- Table 37 shows that nearly 1 out of 10 students in grade 8 (9%), and at least 1 out of 20 students in grades 10 (6%) and 12 (5%) reported using **inhalants** by the age of 13. Tables 36a through 36d show that initiation of inhalants continues at each age with no one age group singled out as the primary point of initiation.
- Prevention efforts for **inhalant** use should occur *prior* to age 9, or prior to the 6th-grade level. Tables 36a through 36c show that approximately 2% of the 6th, 8th, and 10th graders who have used inhalants began using by the age of 9. Since the use of this substance does not clearly level off at any one given age, discussions related to the dangers of using inhalants to get high should be addressed at each grade level.

The Use of Illicit Drugs Other than Marijuana and Inhalants

Overview of Key Findings. For illicit drugs other than marijuana and inhalants, students in grades 6, 8, 10, and 12 all reported very low usage rates occurring prior to 14 years of age. By age 14, usage rates for many of the illicit drugs reach 2%. By age 15, usage rates for cocaine, methamphetamine, sedatives or tranquilizers, hallucinogens, and ecstasy reach at least 3% in some grades. By age 16, usage rates reported by 12th graders are 5% or higher for sedatives or tranquilizers, hallucinogens, and ecstasy. Education efforts for illicit drug use should occur by 14 years of age because use typically starts around age 14 and rises sharply thereafter. The onset of illicit drug use, other than marijuana and inhalants, is detailed below (refer to Table 37 unless otherwise indicated).

- Students at all grade levels report very low usage rates (less than 2%) before age 13 for ***cocaine, methamphetamine, heroin/opiates, sedatives/tranquilizers, hallucinogens, steroids, and ecstasy***. Thus, these illicit drugs are not generally used prior to grade 8.
- Based on 12th-graders' retrospective reports, the majority of students first start using ***illicit drugs, other than marijuana and inhalants***, by age 16 (see Table 36d). However, based on 10th-graders' retrospective reports, the majority of students first start using illicit drugs, other than marijuana and inhalant, by age 14 or 15 (see Table 36c).
- Onset of ***hallucinogen*** use and ***ecstasy*** use seems to be earlier than other illicit drugs (excluding marijuana and inhalants). Onset of ***hallucinogen*** use occurs by 14 years of age for 3% of 10th graders and 2% of 12th graders. Onset of hallucinogen use is by 15 years of age for 3% of 10th graders and 4% of 12th graders, by 16 years for 6% of 12th graders, and by 17 years of age for 7% of 12th graders.
- ***Ecstasy*** use onset occurs by 14 years of age for 3% of 10th and 12th graders. Ecstasy use onset is by 15 years of age for 3% of 10th graders and 4% of 12th graders; by 16 years of age for 4% of 10th graders and 6% of 12th graders; and by 17 years of age for 6% of 12th graders. As seen in Tables 36c through 36d, the age at which the majority of 10th- and 12th-grade students initiated ecstasy use was between 13 and 16.
- Just behind hallucinogens and ecstasy are ***cocaine, methamphetamine, and sedatives/tranquilizers*** onsets, which occur by 14 years of age for approximately 2% of 10th and 12th graders. According to retrospective reports, approximately 3% of 10th graders have used these illicit drugs by the age of 15. Retrospective reports by 12th graders indicate that 2% of seniors have used cocaine by the age of 15, but nearly 3% have used methamphetamine and sedatives/tranquilizers by the age of 15. By the age of 16, approximately 3% of seniors have used cocaine, 4% of seniors have used methamphetamine, and 5% of seniors have used sedatives or tranquilizers. By the age of 17, the percentage of seniors reporting they have used cocaine jumps to 5%.
- Education efforts for all illicit drugs should occur prior to or at the 8th-grade level given that onset of illicit drug use occurs for the majority of students somewhere between 14 and 16 years of age (refer to Table 36).

INCIDENCE OF ALCOHOL AND TOBACCO USE BY AGE

Across all grade levels, incidence of alcohol use is higher, and onset is earlier, than for all other substances. Alcohol is the only substance having a high initiation rate clearly beginning by 9 years old or younger (between 7% and 13% have tried alcohol by 9 years of age). The only other substance that has onset clearly beginning by 9 years old or younger is cigarettes. Table 36 shows that the majority of students who reported using cigarettes indicated that use began at age 9 or earlier. Onset of drunkenness varies by grade level: The majority of 8th graders reported they were first drunk at age 12; the majority of 10th graders reported they were first drunk at age 14; and the majority of 12th graders reported they were first drunk at age 16. The recommended age of alcohol and tobacco education, based on retrospective reports, is by age 9, with education efforts continually reinforced in years that follow.

In this section, the onset of alcohol use is described first, followed by the onset of tobacco use. The data discussed below can be found in Table 38 unless otherwise indicated.

Incidence of Alcohol Use

Overview of Key Findings. The incidence of alcohol use reported below indicates that the majority of students first try alcohol by 9 years of age, with approximately 1 out of 10 students reporting that they have used alcohol by this early age. The majority of the students who drank indicated that more serious alcohol abuse (getting drunk) occurred between the ages of 13 and 16, with the percentages continuing to rise thereafter. More than half of the 10th and 12th graders reported that they had used alcohol by the age of 15, and approximately one third of the 10th and 12th graders had been drunk by 15 years of age.

- As seen in Figure 45a on page 323, a large proportion of students reported **alcohol** onset occurring by age 9. Alcohol use by the age of 9 is retrospectively reported by 7% of 6th graders, 13% of 8th graders, 12% of 10th graders, and 9% of 12th graders. More than one fourth of the 8th (31%) and 10th graders (26%), and approximately one-fifth of the 12th graders (21%), reported using alcohol by the age of 12.
- Table 36a shows that the majority of 6th graders initiated alcohol use by age 9 (7%). Table 36b shows that the majority of 8th graders also initiated alcohol use by age 9 (13%). Table 36c shows that the majority of 10th graders initiated alcohol use at age 14 (14%), with additional peak initiations occurring at age 9 (12%) and 13 (11%). Table 36d shows that the majority of 12th graders initiated alcohol use at age 15 (14%).
- Figure 45b (see page 323) indicates that onset of **drunkenness** peaks somewhere between the ages of 13 and 16. Onset of drunkenness occurs by age 13 for at least 1 out of 10 students in grades 8 (13%), 10 (15%), and 12 (12%). Retrospective reports show that by the age of 15, more than half the 10th and 12th graders have used alcohol (58%, 56%) and approximately one third have been drunk (33%, 32%).
- Alcohol education efforts need to occur prior to students turning 9 years of age, given that initiation first begins for nearly 10% of the students by this age.

TABLE 38
Incidence of Use for Alcohol and Tobacco:
A Comparison of Responses From Sixth, Eighth, Tenth, and Twelfth Graders, 2003

(Entries are percentages %)

Percent who used by the time they were 9 years old					
Grade level of respondents	Alcohol	Been Drunk	Regularly Drank Alcohol	Smoked First Cigarette	Smokeless Tobacco
6th Grade	7.3	0.7	0.5	4.2	0.5
8th Grade	12.5	2.2	1.5	8.1	0.8
10th Grade	12.1	1.6	1.1	8.9	0.8
12th Grade	9.1	1.4	0.6	8.6	1.3

Percent who used by the time they were 10 years old					
6th Grade	11.3	1.6	1.1	5.8	0.7
8th Grade	17.4	3.6	2.2	11.6	1.3
10th Grade	15.2	2.5	1.4	12.6	1.2
12th Grade	12.1	2.1	0.9	12.1	1.7

Percent who used by the time they were 11 years old					
6th Grade	13.1	2.0	1.5	6.7	0.9
8th Grade	22.4	5.5	3.6	15.4	1.9
10th Grade	19.0	3.9	2.2	15.2	1.5
12th Grade	14.7	3.3	1.3	15.0	2.1

Percent who used by the time they were 12 years old					
6th Grade	13.2	2.0	1.6	6.7	0.9
8th Grade	31.1	9.6	6.6	19.8	2.6
10th Grade	26.0	7.1	4.0	20.8	1.9
12th Grade	21.2	6.5	2.4	20.9	2.8

(Table continued on next page)

TABLE 38 (continued)
Incidence of Use for Alcohol and Tobacco:
A Comparison of Responses From Sixth, Eighth, Tenth, and Twelfth Graders, 2003

(Entries are percentages %)

Percent who used by the time they were 13 years old					
Grade level of respondents	Alcohol	Been Drunk	Regularly Drank Alcohol	Smoked First Cigarette	Smokeless Tobacco
8th Grade	36.4	12.9	9.7	22.3	2.9
10th Grade	37.4	14.5	7.8	28.5	2.3
12th Grade	30.6	11.8	4.2	27.2	3.6

Percent who used by the time they were 14 years old					
8th Grade	36.8	13.4	10.3	22.5	3.0
10th Grade	51.5	24.8	15.8	33.2	3.5
12th Grade	41.1	19.9	9.0	32.7	4.7

Percent who used by the time they were 15 years old					
10th Grade	58.4	32.7	23.5	35.6	4.3
12th Grade	55.5	31.5	18.0	38.2	5.9

Percent who used by the time they were 16 years old					
10th Grade	59.1	33.4	24.7	35.9	4.4
12th Grade	67.5	45.9	31.0	43.0	7.0

Percent who used by the time they were 17 or 18 years old					
12th Grade	72.5	51.6	40.6	45.3	7.5

Incidence of Tobacco Use

Overview of Key Findings. Peak initiation of cigarette use occurs at age 9 or younger, for all grade levels (see Table 36). However, cigarette use onset for students does not clearly taper off at any particular age. By 12 years of age, one-fifth of the students in grades 8, 10, and 12 have tried cigarettes. By 14 years of age, approximately one third of the students in grades 10 and 12 have tried cigarettes. Cigarette usage is higher than smokeless tobacco for all grade levels, with smokeless tobacco being used by less than 5% of students by age 14.

- As seen in Table 38, a large proportion of students reported having had their **first cigarette** by the age of 9 (from 4% to 9%). Table 38 shows that by the age of 10, at least 1 out of 10 students in grades 8 (12%), 10 (13%), and 12 (12%) has had their first cigarette. The percentages nearly double from age 10 to age 12, with approximately 1 out of 5 students in grades 8 (20%), 10 (21%), and 12 (21%) having had their first cigarette by age 12.
- Peak initiation of cigarette use occurs at age 9 or younger, for all grade levels, with 4% of 6th graders, 8% of 8th graders, and 9% of 10th and 12th graders reporting that they smoked their first **cigarette** at age 9 or younger (see Tables 36a through 36d). However, as seen in Figure 45c, initiation of cigarette use does not taper off at any particular age.
- **Smokeless tobacco** use is much lower than cigarette use. Tables 36c and 36d show that the majority of 10th and 12th graders who reported using smokeless tobacco began use at 14 years of age or older. Thus, onset of smokeless tobacco use seems to be later than onset of cigarette use for most students.
- Similar to alcohol education efforts, tobacco education efforts need to occur prior to age 9. Given that tobacco initiation doesn't seem to clearly taper off at any one particular age, tobacco prevention messages need to be repeated throughout various grade levels.

AGE OF ONSET OF ALCOHOL, TOBACCO, AND MARIJUANA AS PREDICTORS OF SUBSTANCE USE AND ABUSE

In previous years, the age of onset for tobacco and alcohol use were reported to be significantly associated with subsequent use of other drugs (see Klinge, 2001; Klinge & Miller, 1997, 1999; Pearson, 2002; Woo et al., 1994). The relationship between age of onset and subsequent drug use was examined in the present study by looking at the following six predictor or “marker” variables: (1) retrospective reports of when cigarettes were first tried, (2) retrospective reports of when students first tried marijuana, (3) retrospective reports of when students first tried alcohol, and (4) retrospective reports of when students first got drunk. Outcome variables of interest included the number of drugs tried in the student's lifetime, the number of drugs used in the last 30 days, amount of monthly alcohol use, any substance abuse or dependency, and lifetime prevalence reports for each illicit drug. Any substance abuse or dependency is based on the DSM-III-R criteria and is explained in Chapters 3 and 6.

Chapter 7

The relationship between these predictor and outcome variables is discussed below. All six predictor variables were significantly related to all outcome variables, for all grade levels of respondents ($p < .001$). Because cigarette, alcohol, and marijuana onset are each significantly correlated with the use of more serious substances, parents and educators should be concerned about adolescent use of alcohol and cigarettes – what many refer to as “less” harmful substances. Refer to Table 39 for exact correlations that relate to each of the general findings discussed below.

Overview of Key Findings. Retrospective reports related to onset of cigarette use, trying alcohol, getting drunk, and trying marijuana were all significantly correlated with the reported number of drugs used in one’s lifetime and in the last 30 days, the extent of alcohol use and substance abuse, and the trying of other illicit drugs. Of the six “marker” variables, the ages at which a student tried marijuana and got drunk were generally the best predictors.

- For all grades, onset of *cigarette* use was significantly related to trying each illicit drug, and was a particularly robust predictor of trying marijuana. For instance, the correlations between cigarette onset and trying marijuana were as follows: 6th grade, $r = .32$; 8th grade, $r = .51$; 10th grade, $r = .54$; and 12th grade, $r = .53$.
- In the past, onset of cigarette use tended to be a slightly better predictor of illicit drug use than onset of trying *alcohol* for students in the lower grades (Pearson, 2002). In 2003, neither alcohol nor cigarette onset was a consistently better predictor of substance use than the other.
- Onset of *getting drunk* was one of the best predictors of illicit drug use, with correlations as high as .66. For instance, correlations between onset of getting drunk and trying marijuana at least once were as follows: 6th grade, $r = .27$; 8th grade, $r = .56$; 10th grade, $r = .63$; and 12th grade, $r = .66$.
- Of all the marker variables, *marijuana onset* and *onset of drunkenness* were the best overall predictors of number of drugs used, amount of monthly alcohol use, and illicit drug abuse. Marijuana onset reports by students in grades 8, 10, and 12 accounted for almost 40% of the variance in the number of drugs tried in the student’s lifetime (grade 8 and 12, $r = .62$, $r^2 = 38$; grade 10, $r = .66$, $r^2 = 44$).

TABLE 39
Correlations Between Cigarettes, Alcohol, and Marijuana Use Onset and Use of Various Substances, by Grade, 2003

(Entries are correlations)

	Onset of Trying Cigarettes				Onset of Trying Alcohol				Onset of Getting Drunk				Onset of Trying Marijuana			
Outcome Variables	6th	8th	10th	12th	6th	8th	10th	12th	6th	8th	10th	12th	6th	8th	10th	12th
Number of Drugs Tried in Student's Lifetime	.31	.40	.39	.39	.29	.37	.39	.37	.34	.46	.53	.50	.47	.62	.66	.62
Number of Drugs Used in Last 30 Days	.18	.26	.23	.23	.13	.24	.24	.22	.22	.32	.37	.32	.23	.38	.43	.38
Amount of Monthly Alcohol Use	.24	.37	.36	.31	.33	.41	.40	.39	.33	.53	.52	.49	.25	.41	.46	.44
Any Substance Abuse or Substance Dependency	.14	.30	.31	.29	.14	.25	.29	.29	.28	.42	.40	.42	.26	.39	.40	.42
Tried Marijuana	.32	.51	.54	.53	.22	.43	.49	.54	.27	.56	.63	.66	N/A	N/A	N/A	N/A
Tried Inhalants	.22	.25	.21	.25	.25	.30	.23	.25	.23	.28	.26	.26	.10	.27	.26	.27
Tried Cocaine	.10	.13	.13	.18	.08	.12	.14	.16	.17	.15	.22	.25	.17	.22	.24	.28
Tried Methamphetamine	.12	.14	.17	.14	.12	.11	.16	.14	.21	.18	.25	.21	.20	.19	.28	.24
Tried Heroin/Opiates	.08	.12	.06	.06	.07	.09	.11	.08	.12	.11	.17	.13	.22	.12	.19	.14
Tried Sedatives/Tranquilizers	.08	.13	.14	.14	.12	.12	.18	.16	.11	.14	.27	.22	.09	.21	.23	.27
Tried Ecstasy	.10	.16	.18	.18	.02	.13	.19	.19	.08	.22	.28	.26	.06	.23	.31	.31
Tried Hallucinogens	.11	.15	.16	.22	.12	.13	.19	.21	.14	.22	.30	.32	.14	.24	.31	.36
Tried Steroids	.10	.14	.08	.02	.09	.14	.12	.12	.07	.17	.16	.11	.07	.15	.16	.11

NOTES: All correlations in the table are significant, $p < .001$. The *Number of Drugs Tried in Student's Lifetime* and *Number of Drugs Used in Last 30 Days* ranged from 0 to 12 drugs (marijuana, inhalants, cocaine, methamphetamine, heroin or other opiates, sedatives or tranquilizers, hallucinogens, steroids, ecstasy/MDMA, GHB, Rohypnol, and ketamine). Any substance abuse or dependency is based on the DSM-III-R criteria and is described in Chapter 3.